

REMARKS

Entry of the foregoing and reconsideration of the application identified in caption, as amended, pursuant to and consistent with 37 C.F.R. §1.114 and in light of the remarks which follow, are respectfully requested.

By the above amendments, claims 29 and 34 have been canceled without prejudice or disclaimer, and the subject matter of such canceled claims has been incorporated into claim 22. Claim 22 has also been amended to recite that R₃ represents hydrogen or a hydroxyl radical. Claim 33 has been amended to correct a typographical error. Entry of the above amendments is proper at least because a Request for Continued Examination is being filed herewith. See 37 C.F.R. §1.114.

In the Official Action, claims 22, 23, 26, 27 and 29-43 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 3,893,981 (*Thoma et al.*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Thoma et al does not disclose or suggest each feature recited in independent claim 22. For example, *Thoma et al* does not disclose or suggest a polyamide comprising macromolecular chains corresponding to the formula (I), R₃-(X-R₂-Y)_n-X-A-R₁-A-X-(Y-R₂-X)_m-R₃, as recited in claim 22.

In this regard, *Thoma et al* discloses a polyamide produced by the polycondensation of lactams or ω -aminocarboxylic acids with 0.1 to 5 mol of triamines of the formula H₂N-(CH₂)_n-NH-(CH₂)_n-NH₂. See abstract and col. 4, lines 10-14. *Thoma et al* discloses that by use of such triamines, basic modified polyamides are formed which include the recurrent structural units having the formula set forth in column 4, lines 36-43. *Thoma et al* discloses that such basic

modified polyamides are capable of reacting with reactive groups of reactive dyes. Such recurrent structural units set forth in column 4, lines 36-43, do not have the claimed structure -X-A-R₁-A-X-, which is directly bonded to R₃-(X-R₂-Y)_n- and -(Y-R₂-X)_m-R₃. Even if the use of lactams in the production of the basic modified polyamides of *Thoma et al* would have resulted in structure which corresponds to R₃-(X-R₂-Y)_n- and -(Y-R₂-X)_m-R₃, there is no disclosure of the structure -X-A-R₁-A-X- as is presently claimed, which is directly bonded to R₃-(X-R₂-Y)_n- and -(Y-R₂-X)_m-R₃.

In this regard, Applicants note that such claimed structure -X-A-R₁-A-X- is formed from the use of a difunctional compound that is adipic acid, decanedioic acid, sebacic acid, dodecanedioic acid, terephthalic acid, isophthalic acid, hexamethylenediamine, methylpentamethylenediamine, 4,4'-diaminodicyclohexylmethane, butanediamine, metaxylylenediamine, 1,3-propanediol, 1,2-ethanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol or polytetrahydrofuran, as recited in claim 1. **As noted above, claim 1 has been amended to recite such listing of difunctional compounds.** Quite clearly, the use of such a difunctional compound in obtaining the claimed polyamide results in a structure that is different from the recurrent structural units disclosed by *Thoma et al*, which is formed from the use of the triamine disclosed therein.

Furthermore, it would not have been obvious to modify *Thoma et al* to employ the claimed difunctional compound in the place of the triamine disclosed therein. *Thoma et al* is concerned with providing a basic modified polyamide which is capable of reacting with reactive groups of reactive dyes, and teaches employing its specifically disclosed triamines to obtain such desired structure. See col. 4, lines 44-62. Thus, in view of the function of the triamine taught by *Thoma et al*, it would not

have been obvious to the ordinarily skilled artisan to substitute the *Thoma et al* triamine with the claimed difunctional compounds.

For at least the above reasons, it is apparent that independent claim 22 is non-obvious over *Thoma et al*. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

Claims 22 and 26-43 stand rejected under 35 U.S.C. §103(a) as being obvious over U.S. Patent No. 6,160,080 (*Cucinella et al*). Withdrawal of this rejection is respectfully requested for at least the following reasons.

Cucinella et al does not disclose or suggest each feature recited in independent claim 22. For example, *Cucinella et al* does not disclose or suggest a polyamide comprising macromolecular chains corresponding to the formula (I), $R_3-(X-R_2-Y)_n-X-A-R_1-A-X-(Y-R_2-X)_m-R_3$, as recited in claim 22.

As noted above, claim 1 has been amended to recite that the polyamide is obtained by copolymerization from a mixture of monomers comprising a difunctional compound, wherein the difunctional compound is adipic acid, decanedioic acid, sebacic acid, dodecanedioic acid, terephthalic acid, isophthalic acid, hexamethylenediamine, methylpentamethylenediamine, 4,4'-diaminodicyclohexylmethane, butanediamine, metaxylylenediamine, 1,3-propanediol, 1,2-ethanediol, 1,4-butanediol, 1,5-pentanediol, 1,6-hexanediol or polytetrahydrofuran. And as explained above, the structure -X-A-R₁-A-X- of the claimed formula (I) is formed from the use of such difunctional compound.

The formula (I) compound of *Cucinella et al*, in which m is an integer between 3 and 8, does not correspond to the claimed macromolecular chains corresponding to the formula (I). See col. 1, line 61 and col. 2, line 46. There is no disclosure or

suggestion of the structure -X-A-R₁-A-X- of the claimed formula (I) that is formed from the use of the recited difunctional compound. Furthermore, *Cucinella et al* teaches the combined use of a star polyamide of formula (I), and a linear polyamide chain of formula (II). See col. 3, lines 21-31. *Cucinella et al* teaches the importance of employing both the star polyamide and the linear polyamide chain in its composition. As such, it would not have been obvious to modify the star polyamide disclosed by *Cucinella et al* to arrive at the claimed macromolecular chain of formula (I).

Applicants note that by employing a polyamide comprising a macromolecular chains corresponding to the formula (I), for example, improved abrasion resistance properties can be attained in comparison with comparative star polyamides having structures similar to the structure taught by *Cucinella et al*. In this regard, the Examiner's attention is directed to the examples, in which comparative examples B1, B2 and B3 employing star polyamides exhibited inferior abrasion resistance properties in comparison with inventive examples employing a polyamide comprising macromolecular chains corresponding to the formula (I). See Table 1.

For at least the above reasons, it is apparent that independent claim 22 is non-obvious over *Cucinella et al*. Accordingly, withdrawal of the §103(a) rejection is respectfully requested.

The dependent claims are allowable at least by virtue of their direct or indirect dependence from independent claim 22. Thus, a detailed discussion of the additional distinguishing features recited in the dependent claims is not set forth at this time.

From the foregoing, further and favorable action in the form of a Notice of Allowance is believed to be next in order, and such action is earnestly solicited. If there are any questions concerning this paper or the application in general, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

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